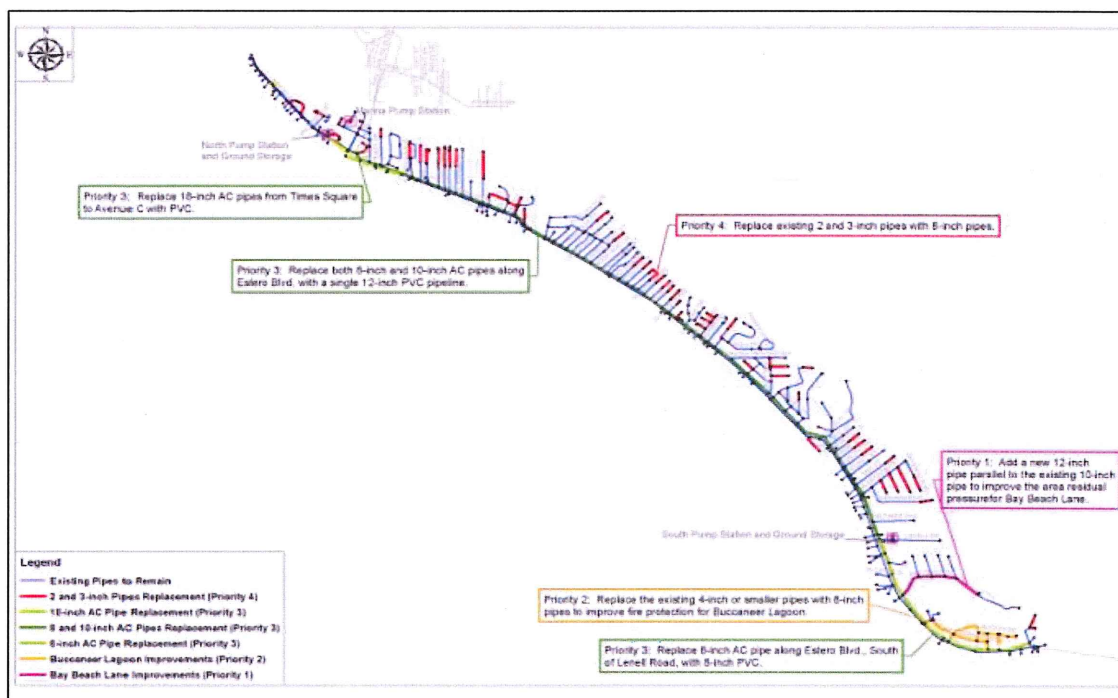


Town of Fort Myers Beach

Water Distribution System Evaluation Report Update



October 2010

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1.0 Introduction

1.1 Background

The Town of Fort Myers Beach owns and operates a potable water distribution system, which serves all of Estero Island. The potable water distribution system includes two water supply pipelines (16-inch and 12-inch) from Lee County Utilities, three booster pumping stations (Marina, North, and South), two ground storage tanks (North and South) and water transmission and distribution piping ranging in size from 18-inch to 2-inch.

In 2008, AECOM (formerly Boyle Engineering) prepared a report entitled, "Evaluation of Existing Water Distribution System of the Town of Fort Myers Beach." The objectives of that report (herein called the 2008 Evaluation) are summarized as follows:

- Update and improve the Town's water distribution system hydraulic model
- Evaluate flow and pressure in the water distribution system using the hydraulic model under various scenarios
- Evaluate the existing storage and pumping capacities
- Identify and define recommended improvements

The 2008 Evaluation identified seven priority projects and provided cost estimates for each project. The Town has begun implementation of the recommended improvements and already completed one of the priority projects along North Estero Boulevard.

1.2 Purpose and Scope

During the time that the Evaluation was developed, construction cost estimates for the priority projects were based on cost data representative of a "boom" economy. As part of this Report Update, AECOM reviewed the 2008 Evaluation recommendations and cost estimates and updated those cost estimates based on recent bid information, which reflect the current economic conditions.

AECOM also reviewed the priority projects and provided further detail for replacement of asbestos-cement (AC) pipe along Estero Boulevard. AECOM prepared a Report Update, which can be used as an attachment to the Town's referendum for long-term financing, and is the subject of this Report. The purpose of this Report Update is to summarize the updates to the 2008 Evaluation recommended improvement projects, reprioritize the improvements, and update the cost estimates.

2.0 Updated Recommended Water Distribution System Improvements and Cost Estimates

The 2008 Evaluation included the North Estero Boulevard Improvement under Priority 3. This recommended project was removed from the Report Update because it was completed by the Town in the spring of 2010. The 2008 Evaluation also included Island Wide Water System Improvements in Four Phases under Priority 4. This project was updated by separating it into two projects: Estero Boulevard Improvements (Replace AC Pipe) and Replacement of all 2- and 3-inch pipes. The recommended improvements identified in the 2008 Evaluation under priorities 5, 6, and 7 are not changed. These projects did not need to be updated because there are no changes in the scope and estimated cost. Although the scope of work identified in the 2008 Evaluation for priorities 1 and 2 is not changed, the estimated cost was revised to reflect current market conditions.

The Report Update includes the following:

- Recommended Water System Improvements Map
- Cost estimates for the updated recommended projects
- Updated Table 11 – Recommended Projects in Priority Order

A description for each of these is provided below.

2.1 Recommended Water System Improvements Map

The Recommended Water System Improvements Map shows the existing pipe layout as well as the recommended pipeline improvements. The Map also shows the location of the pump stations and storage facilities, and the priority order of the improvements. The priorities are color coded and labeled. The Recommended Water System Improvements Map is shown in Figure 1 at the end of this Report Update.

The Updated Report includes the replacement of the existing 8-inch and 10-inch AC pipes along Estero Boulevard. The 10-inch pipe is located on the Gulf side of Estero Boulevard and the 8-inch is on the east (Bay) side. There also is an existing 16-inch ductile iron water main on the Gulf side of Estero Boulevard, which is in good condition and does not need to be replaced. In order to reduce the cost and disruption during construction, it is recommended to replace the existing 8-inch and 10-inch AC water mains with a single 12-inch water main on the Bay side of Estero Boulevard. Water services connected to the existing 10-inch on the Gulf side of Estero Boulevard would be connected to the 16-inch. Water services connected to the existing 8-inch on the Bay side would be connected to the new 12-inch. The 12-inch main is hydraulically equivalent to the existing 8-inch and 10-inch parallel mains, which would be abandoned in place. A single 12-inch main would be less expensive than two parallel mains installed on opposite sides of the street.

There are four major priorities for improving the flow and pressures throughout the Town, which are updated in this Report Update. Priority 1, which is to be completed first, is the Bay Beach Lane improvements. Priority 2 is the Buccaneer Lagoon Improvements, Priority 3 is the Estero Boulevard AC Pipe Replacement Improvements, and Priority 4 is the Replacement of all 2 and 3-inch galvanized steel pipes in the Town.

2.2 Opinion of Probable Construction Cost

Updated construction cost estimates were prepared for each of the four major priority projects. The construction cost estimates are based on unit prices bid for recent water system improvement projects in Southwest Florida. The average from these bids was used to determine the updated costs for the four priority projects. The updated construction costs are included in Tables 1 through 4 and include 15 percent for contingency. The cost estimates are for construction only and do not include engineering, legal and administrative costs.

The estimated construction cost for replacement of the AC pipes on Estero Boulevard under the priority 3 project is \$6.7 million. The unit prices for this project are higher than priority projects 1 and 2 due to potential increases in future construction costs and because of construction in a congested street (Estero Boulevard), which will require significant traffic control and safety precautions. In addition, it is assumed that the pipe would be installed in the side of the road, and will require pavement replacement. For the piping in priority 3, it was assumed that the existing 8-inch and 10-inch AC pipe would be abandoned-in-place and filled with grout. These pipes would be replaced with a new single 12-inch PVC pipe on the Bay side of Estero Boulevard. In some cases it may be necessary to remove the existing AC pipe and place the new PVC pipe in the same trench as the old 8-inch AC pipe. However, the extent of AC pipe removal will not be known until the detailed design phase. It is recommended to abandon and grout the existing AC pipe as much as possible because it will be the least cost option.

The estimated construction cost for the island-wide replacement of 2-inch and 3-inch galvanized pipe under the priority 4 project is \$2.9 million. Again, the unit prices for this project are higher than priority projects 1 and 2 due to potential increases in future construction costs. The Priority 4 improvements include replacement of the 2- and 3-inch pipes with minimum 8-inch pipe. Since the existing pipes on residential streets upstream of the 2- and 3-inch pipes is 6-inch, the Town may want to consider reducing the proposed 8-inch to 6-inch during the detailed design phase.

2.3 Updated Table 11 – Recommended Projects in Priority Order

An updated Table 11 was prepared, which summarizes the recommended projects in priority order. The costs and priorities are updated from the 2008 Evaluation to reflect the re-prioritization and updated construction cost estimates. Since priorities 3 and 4 are larger projects, the Town may consider implementing these projects in phases. The updated Table 11 is presented as Table 5 at the end of this Update Report.

Figures and Tables

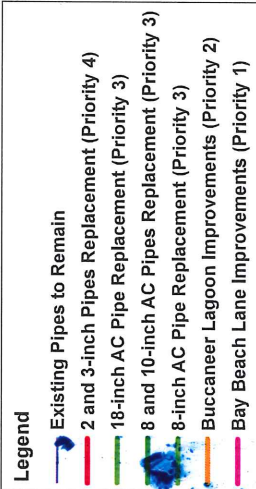


Table 1

Priority 1

Bay Beach Lane Improvements

Objective: Add a new 3,200-foot 12-inch pipe parallel to the exiting 10-inch pipe to improve the area residual pressure under both PHD and PDD + FF conditions.

Opinion of Probable Construction Cost Bay Beach Lane					
Item #	Item Description	Unit	Quantity	Price*	
				Per Unit	Extended
1	Mobilization	LS	1	\$60,000	\$60,000
2	Water Main				
2a	12 inch PVC C-900 DR-18 CL 150	LF	600	\$60	\$36,000
2b	12 inch PVC C-900 DR-14 CL 150	LF	2,600	\$70	\$182,000
3	Water Valve Assembly				
3a	12 inch Gate Valve (w/box)	EA	4	\$2,600	\$10,400
4	Water Tapping Sleeve and Valve Assembly				
4a	12 inch by 8 inch Tapping Sleeve and Valve (w/box)	EA	1	\$3,000	\$3,000
4b	12 inch by 10 inch Tapping Sleeve and Valve (w/box)	EA	1	\$3,000	\$3,000
5	Air Release Valve Assembly	EA	1	\$1,250	\$1,250
6	Fire Hydrant Assembly	EA	7	\$3,400	\$23,800
7	Permanent Bacteriological Sampling Point	EA	1	\$1,300	\$1,300
8	Traffic Control	LS	1	\$18,000	\$18,000
9	Pavement Replacement	yd ²	1800	\$7.50	\$13,500
Subtotal					\$352,250
Contingency (15%)					\$52,838
Total					\$405,088

*Prices based on 2010 data, does NOT include labor costs.

Table 2

Priority 2

Buccaneer Lagoon Improvements

Objective: Replace the existing 4-inch or smaller pipes with approximate 6,900 feet 8-inch pipes to improve fire protections.

Opinion of Probable Construction Cost Buccaneer Lagoon					
Item #	Item Description	Unit	Quantity	Price*	
				Per Unit	Extended
1	Mobilization	LS	1	\$60,000	\$60,000
2	Water Main				
2a	8 inch PVC C-900 DR-18 CL 150	LF	2,600	\$50	\$130,000
2b	8 inch PVC C-900 DR-14 CL 150	LF	4,300	\$60	\$258,000
3	Water Valve Assembly				
3a	8 inch Gate Valve (w/box)	EA	27	\$1,500	\$40,500
4	Water Tapping Sleeve and Valve Assembly				
4a	12 inch by 8 inch Tapping Sleeve and Valve (w/box)	EA	3	\$3,000	\$9,000
5	Temporary Interconnection	EA	3	\$2,100	\$6,300
6	Grout and Abandon Existing 2 inch Water Main	LF	700	\$4	\$2,800
7	Grout and Abandon Existing 3 inch Water Main	LF	400	\$4	\$1,600
8	Grout and Abandon Existing 4 inch Water Main	LF	5,800	\$5	\$29,000
9	Air Release Valve Assembly	EA	1	\$1,250	\$1,250
10	Fire Hydrant Assembly	EA	14	\$3,400	\$47,600
11	Remove Fire Hydrant Assembly	EA	14	\$1,000	\$14,000
12	Permanent Bacteriological Sampling Point	EA	1	\$1,300	\$1,300
13	Traffic Control	LS	1	\$30,000	\$30,000
14	Pavement Replacement	yd ²	2800	\$7.50	\$21,000

Subtotal **\$652,350**

Contingency (15%) **\$97,853**

Total **\$750,203**

*Prices based on 2010 data, does NOT include labor costs.

Table 3**Priority 3****Replace AC Pipes on Estero Blvd.**

Objective: Replace existing old AC pipes with recommended pipes based on the Town provided information with minimum 8-inch pipes. The 8-inch and 10-inch AC pipes will be replaced with a single 12-inch PVC pipe, and the 18-inch AC pipe will be replaced by a PVC pipe. Because the improvement costs are at least 6.7 million dollars, AECOM recommends completing the project in phases.

Opinion of Probable Construction Cost for old AC Pipes					
Item #	Item Description	Unit	Quantity	Price*	
				Per Unit	Extended
1	Mobilization	LS	1	\$60,000	\$60,000
2	Water Main				
2a	8 inch PVC C-900 DR-14 CL 150	LF	8,200	\$90	\$738,000
2b	12 inch PVC C-900 DR-14 CL 150	LF	24,500	\$105	\$2,572,500
2c	18 inch PVC C-900 DR-14 CL 150	LF	2,300	\$140	\$322,000
3	Water Valve Assembly				
3a	8 inch Gate Valve (w/box)	EA	6	\$1,500	\$9,000
3b	12 inch Gate Valve (w/box)	EA	201	\$2,500	\$502,500
3c	18 inch Gate Valve (w/box)	EA	3	\$3,500	\$10,500
4	Water Tapping Sleeve and Valve Assembly				
4a	12 inch by 8 inch Tapping Sleeve and Valve (w/box)	EA	2	\$3,000	\$6,000
4b	8 inch by 8 inch Tapping Sleeve and Valve (w/box)	EA	1	\$3,000	\$3,000
4c	18 inch by 16 inch Tapping Sleeve and Valve (w/box)	EA	2	\$4,000	\$8,000
5	Temporary Interconnection	EA	80	\$2,500	\$200,000
6	Transfer Service Connection (with Corp. Stop)¹	EA	100	\$1,500	\$150,000
7	Grout and Abandon Existing 2 inch Water Main	LF	27,000	\$4	\$108,000
8	Grout and Abandon Existing 6 inch Water Main	LF	3,000	\$7	\$21,000
9	Grout and Abandon Existing 8 inch Water Main	LF	29,000	\$10	\$290,000
10	Grout and Abandon Existing 10 inch Water Main	LF	20,000	\$12	\$240,000
11	Grout and Abandon Existing 18 inch Water Main	LF	2,300	\$15	\$34,500
12	Air Release Valve Assembly	EA	10	\$1,500	\$15,000
13	Relocate Fire Hydrant Assembly	EA	70	\$3,000	\$210,000
14	Permanent Bacteriological Sampling Point	EA	15	\$1,500	\$22,500
15	Pavement Replacement	yd ²	24,000	\$7.50	\$180,000
16	Traffic Control²	LS	1	\$125,000	\$125,000

Subtotal **\$5,827,500**

Contingency (15%) **\$874,125**

Total **\$6,701,625**

¹ Actual number of connections to be confirmed by Town, 100 assumed.

² Assume two active construction crews.

*Does NOT include labor costs.

Table 4

Priority 4

Replace 2" and 3" Pipes

Objective: Replace existing 2 or 3-inch galvanized steel pipes (27,500 feet) with minimum 8-inch pipes.

Because the improvement costs are at least 2.9 million dollars, AECOM recommends completing the project in phases.

Opinion of Probable Construction Cost for 2" and 3"					
Item #	Item Description	Unit	Quantity	Price*	
				Per Unit	Extended
1	Mobilization	LS	1	\$60,000	\$60,000
2	Water Main ¹				
2a	8 inch PVC C-900 DR-18 CL 150	LF	10,500	\$60	\$630,000
2b	8 inch PVC C-900 DR-14 CL 150	LF	17,000	\$70	\$1,190,000
3	Water Valve Assembly				
3a	8 inch Gate Valve (w/box)	EA	12	\$1,500	\$18,000
4	Water Tapping Sleeve and Valve Assembly				
4a	12 inch by 8 inch Tapping Sleeve and Valve (w/box)	EA	8	\$3,000	\$24,000
5	Temporary Interconnection	EA	10	\$2,500	\$25,000
6	Grout and Abandon Existing 2 inch Water Main	LF	16,500	\$4	\$66,000
7	Grout and Abandon Existing 3 inch Water Main	LF	11,000	\$5	\$55,000
8	Air Release Valve Assembly	EA	0	\$1,500	\$0
9	Fire Hydrant Assembly	EA	56	\$3,500	\$196,000
10	Remove Fire Hydrant Assembly	EA	56	\$1,000	\$56,000
11	Permanent Bacteriological Sampling Point	EA	5	\$1,500	\$7,500
12	Traffic Control	LS	1	\$125,000	\$125,000
13	Pavement Replacement	yd ²	11,000	\$7.50	\$82,500

Subtotal	\$2,535,000
Contingency (15%)	\$380,250
Total	\$2,915,250

¹ Town may consider 6" PVC instead of 8" PVC.

*Does NOT include labor costs.

Table 5

Table 11 - Recommended Projects in Priority Order

Priority	Project Name	Objectives	Projected Budget
1	Bay Beach Lane Improvement	Add a new 3,200 feet 12-inch PVC pipe parallel to the exiting 10-inch pipe to improve the area residual pressure under both PHD and PDD + FF conditions.	\$218,000 New Pipe + \$187,088 Appurtenances and Contingency = \$405,088 ≈ \$410,000
2	Buccaneer Lagoon Improvement	Replace the existing 4-inch or smaller pipes (approximate 6,900 feet) with 8-inch PVC pipes to improve fire protections.	\$388,000 New Pipe + \$362,203 Appurtenances and Contingency = \$750,203 ≈ \$750,000
3	Estero Boulevard AC Pipe Improvement	Replace existing 8 and 10-inch AC (asbestos cement) pipes with single, new 12-inch PVC pipe along Estero Boulevard. Replace existing 18-inch AC pipe from Times Square to Avenue C with new PVC pipe. Abandon-in-place existing 2-inch pipe along Estero Boulevard and abandon-in-place the 8, 10, and 18-inch AC pipes. Because the improvement costs are at least 6.7 million dollars, AECOM recommends completing the project in phases.	\$3,632,500 New Pipe + \$3,069,125 Appurtenances and Contingency = \$6,701,625 ≈ \$6,700,000
4	2 and 3-inch Pipe Island Wide Improvement	Replace existing 2 or 3-inch galvanized pipes (total 27,500 feet) with minimum 8-inch PVC pipes. Because the improvement costs about 3.0 million dollars, it might be better to complete it in phases.	\$1,820,000 New Pipe + \$1,095,250 Appurtenances and Contingency = \$2,915,205 ≈ \$3,000,000
5	FMBPWSI Operations Manual	Evaluate and update the FMBPWSI Operations Manual against national standards, the Town's development codes, and pertinent local ordinances.	\$20,000
6	Feasibility Study of Building the Town's Own Water Treatment Plant	The total received potable water from LCU is about 413 million gallon per year, and annual total purchasing cost is about 1 million dollars. AECOM recommends conducting a feasibility study of supplying the water from the Town's own water treatment plant against continuously purchasing water from LCU. The two water supply lines from LCU should remain in case of emergencies.	\$50,000
7	Ground Storage Tank Improvement	Add a 1.0 MG ground storage tank to increase the capacity to continuously supply water to the whole island using North and South Pumping Stations if no water can be provided from LCU.	\$550,000